

## Foreign Exchange

### FOREX MARKET

The currency exchange market is the largest market in the world with transactions worth \$1.5 trillion taking place in a single day. Forex trading is the selling of a currency and simultaneously buying another currency. Trading is done in currency pairs such as Euro to the dollar or dollar to the yen. The most frequently traded currencies in the foreign exchange market are the US Dollar, the British pound, the Japanese Yen and the Euro.

Unlike stocks and futures, forex trading is not conducted in a centralized exchange. It is considered as an over-the-counter (OTC) market as transactions are executed between two parties telephonically or via the electronic network. The forex market is frequently referred to as the inter-bank market because banks dominate it. However, in recent years the number of other market participants such as multinational corporations, money managers, and speculators has increased significantly, particularly so with the advent of the internet permitting trading on a 24 hour basis.

Common terms used in forex trading:

1. Bid: It is the price at which a buyer has offered to buy the currency.
2. Ask: It is the price at which a seller has offered to sell the currency.
3. Spread: It is the difference between the bid price and the ask price.
4. Intraday: Refers to all positions that are opened and closed at anytime during a normal trading day.
5. Overnight position: Refers to all positions that are active at the end of the trading day and are carried over to the next day for trading.
6. Long position: In a long position, the trader buys a currency at a particular price with the intention of selling for a higher price at a later date.
7. Short position: In a short position, the trader sells a currency anticipating that it will depreciate.
8. Limit order: A limit order is an order with restrictions in regard to the maximum price to be paid or the minimum price to be received.
9. Stop loss order: In a stop loss, an open position is automatically liquidated at a specified price. This strategy is used to limit losses

Unlike many major equities and futures markets, the structure of the FX market is highly decentralized. This means that there is no central location where trades occur. The New York Stock Exchange, for example, is a totally centralized exchange. All orders pertaining to the purchase or sale of a stock listed on the NYSE are routed to the same dealer and pass through the hands of a single clearing firm. This structure requires buyers and sellers to meet at the NYSE in order to trade a stock that is listed on this exchange. It is for this reason that there is one universally quoted price for a stock at any given time.

In the FX market there are multiple dealers whose business is to unite buyers and sellers. Each dealer has the ability and the authority to execute trades independently of each other. This structure is inherently competitive as traders are faced with a choice between a variety of firms with an equal ability to execute their trades. The firm that offers the best services and execution will capitalize on this market efficiency by attracting the most traders. In the equities markets, the execution of trades is monopolized and there is no incentive for a clearing firm to offer competitive prices, to innovate, or to improve the quality of their service

### Using Stop-Loss Orders to Manage Risk

Due to the importance of money management to long-term successful trading, the use of a stop-loss order is imperative for any trader who wishes to succeed in the currency market. The stop-loss order allows traders to specify the maximum loss they are willing to accept on any given trade. If the market reaches the rate the trader specifies in his/her stop-loss order, then the trade will be closed immediately. As a result, the use of stop-loss orders allows you to quantify your risk every time you enter a trade.

What is market cycle?

In forex markets, a cycle is loosely defined as price movement of a market from a local bottom to a local top and back again. Cycles, just like price trends, can be long, short or intermediate in length. A specific market may have a 20 day, 52 week and 5 year cycle, all acting together to describe price activity. By adding the cycles together, the actual price activity can be forecast.

### FOREX INDICATORS

With the rise of the internet, Forex trading can be done in a click of the mouse. Money travels through space and wires all the time. The computers have done a big help in the growth of Forex trading, transactions can now be done anytime anywhere. Since somebody is up at a given time everyday

anywhere in the world, you will never lose someone to trade with.

There are two basic and fundamental ways to analyze and evaluate foreign exchange trading. There is the technical analysis and the fundamental analysis. There is a huge difference between the two.

In Fundamental analysis, Forex analyzers and brokers watch out for causes to market fluctuation. These causes may include the political condition of the country, their laws and legislations, financial policies, their growth rate and other factors as well.

Technical analysis of Forex trading includes graphs, charts and other method of measuring past data to see the indication of the rise and fall of currencies. They get all the information they need and use them to calculate and forecast the possible direction of a certain currency.

## Relative Strength Index (RSI)

what is RSI?

RSI is an indicator that falls under the category of oscillators, and it is an extremely simple indicator to use. RSI works well in range-bound markets, but it has limited value in trending or breakout markets.

What RSI Does

RSI offer indications of when a currency pair is overbought/oversold? RSI essentially calculates the strength of all upward candles against the strength of all downward candles over the course of the specified time frame.

How to Use RSI in Trading

Can be used to determine overbought/oversold levels

Overbought/Oversold

If RSI is above 70, the pair is considered to be overbought. Some traders enter short at this point, but this can be dangerous as the price may still be rising. Enter short when the RSI crosses back under 70, as this may indicate that the momentum has turned. If the RSI is below 30, the pair is considered to be oversold; enter when RSI crosses back above 30. Like most oscillators, RSI works best when the market is range-bound – in other words, when the market is expected to simply gravitate between an upper and lower level

Simple Moving Average (SMA) - The average price of a currency pair over a given time period, (15 minutes, 1 hour, 1 day, etc.) where each period in the average is weighted equally. Since this indicator is widely used by day traders and swing traders in many markets, it is important to understand how it is calculated. A basic example to calculate the 4-day SMA will demonstrate this.

Example (using closing prices of the EUR/USD):

Day 1 Close = 1.1210

Day 2 Close = 1.1250

Day 3 Close = 1.1220

Day 4 Close = 1.1240

$SMA(4) = (1.1210 + 1.1250 + 1.1220 + 1.1240) / 4 = 1.1230$

Consequently, the average price of the Euro - U.S. Dollar during the four days shown above is 1.1230.

Exponential Moving Average (EMA) - Unlike the SMA that gives equal weight to all prices, the exponential average gives more weight to the most recent currency prices. The purpose of the exponential weight is to give more importance to the most recent data in the determination of trend direction.

Moving Averages are one of the most popular and easy to use tools available to the technical analyst. By using an average of prices, moving averages smooth a data series and make it easier to spot trends. This can be especially helpful in volatile markets.

The formula for an exponential moving average is:

$$X = (K \times (C - P)) + P$$

X = Current EMA

C = Current Price

P = Previous period's EMA\*

K = Smoothing constant

(\*A SMA is used for first period's calculation)

The smoothing constant applies the appropriate weighting to the most recent price relative to the previous exponential moving average. The formula for the smoothing constant is:

$$K = 2/(1+N)$$

N = Number of periods for EMA

For a 10-period EMA, the smoothing constant would be .1818.

$$2/(10+1)=2/11=.1818=18.18\%$$

The EMA formula works by weighting the difference between the current period's price and the previous period's EMA and adding the result to the previous

period's EMA. There are two possible outcomes: the weighted difference is either positive or negative.

If the current price (C) is higher than the previous period's EMA (P), the difference will be positive (C - P). The positive difference is weighted by multiplying it by the constant ((C - P) x K) and the answer is added to the previous period's EMA, resulting in a new EMA that is higher ((C - P) x K) + P.

If the current price is lower than the previous period's EMA, the difference will be negative (C - P). The negative difference is weighted by multiplying it by the constant ((C - P) x K) and the final result is added to the previous period's EMA, resulting in a new EMA that is lower ((C - P) x K) + P.

**Bollinger Bands** - The theory behind Bollinger Bands is that currency prices tend to stay within the upper and lower bands. Bollinger Bands are plotted a number of standard deviations above and below a moving average (SMA). The default values used in the software are a 20-period simple moving average and 2 standard deviations, which are commonly used values in the industry. A common use of bollinger bands when trading currencies is to sell when the price is close to the upper band and buy when the price is close to the lower band. A distinctive characteristic of Bollinger Bands is that the spacing between the bands varies with price volatility. During periods of extreme changes in foreign exchange rates (high volatility), the bands widen to become more forgiving. On the other hand, the bands become narrower during periods of low volatility, containing currency prices. Some forex traders use the band in combination with other indicators such as RSI (Relative Strength), MACD (Moving Average Convergence/Divergence), and Rate of Change, which are also available with the trading platform.

bollinger bands are Curves plotted above and below a moving average of prices using a standard deviation offset. You specify where the bands should be placed in relation to the average

**Rate of Change** - A momentum oscillator in which the most recent price is divided by the oldest price. For example, to construct a 9 day rate of change oscillator, the latest closing price is divided by the close nine days ago and the result is multiplied by 100. ROC has a horizontal median called equilibrium. It is this median that tells us everything we need to know about rate of change.

The normal time frame for ROC measurement is 10 days. The ratio to build the ROC indicator is as follows:

$$\text{Rate of Change} = 100 (Y/Y_x)$$

&quot;Y&quot; represents the most recent closing price, and Y<sub>x</sub> represents the closing price a specific number of days ago

**Momentum** - Measures the rate of change in currency prices (not the actual price levels). Ten (10) is a commonly used period for the momentum calculation. The momentum oscillator consists of the difference between the current closing price and the oldest closing price in a given number of periods; for example, the 10-day momentum is calculated by taking the current closing price, subtracting the price 10 days ago, and plotting the results around the zero line. The results plotted can be negative (current price is lower than oldest price) or positive (current price is greater than the oldest price). This indicator can be used as either a trend-following oscillator (similar to the MACD) or as a leading indicator.

The Momentum Technical Indicator measures the amount that a security's price has changed over a given time span.

There are basically two ways to use the Momentum indicator:

You can use the Momentum indicator as a trend-following oscillator similar to the Moving Average Convergence/Divergence (MACD). Buy when the indicator bottoms and turns up and sell when the indicator peaks and turns down. You may want to plot a short-term moving average of the indicator to determine when it is bottoming or peaking.

If the Momentum indicator reaches extremely high or low values (relative to its historical values), you should assume a continuation of the current trend. For example, if the Momentum indicator reaches extremely high values and then turns down, you should assume prices will probably go still higher. In either case, only trade after prices confirm the signal generated by the indicator ( e.g., if prices peak and turn down, wait for prices to begin to fall before selling).

You can also use the Momentum indicator as a leading indicator. This method assumes that market tops are typically identified by a rapid price increase (when everyone expects prices to go higher) and that market bottoms typically end with rapid price declines (when everyone wants to get out). This is often the case, but it is also a broad generalization.

As a market peaks, the Momentum indicator will climb sharply and then fall off — diverging from the continued upward or sideways movement of the price. Similarly, at a market bottom, Momentum will drop sharply and then begin to climb well ahead of prices. Both of these situations result in divergences between the indicator and prices.

MACD (Moving Average Convergence/Divergence) - Consists of two lines. The first line (MACD line) is obtained by subtracting a 26-day exponential moving average (EMA) of a currency from its 12-day EMA. The second line (signal line) is usually a 9 period EMA of the MACD line. The result is an oscillator that fluctuates above and below zero (0). Currency traders have different ways to trade the MACD. One way is to buy when the MACD line goes above zero and sell when it goes below zero. When the MACD crosses over the zero line, it means the 12-day moving average went higher (crosses over) than the 26-day moving average. This is nothing more than a bullish moving average crossover. When the MACD falls below zero, it means that the 12-day moving average crossed under the 26-day moving average, implying a bearish shift in the currency. Some traders also trade off the crosses of the MACD line and the signal line (its moving average); that is, when the MACD crosses over the signal line, it generates a buy signal and when it crosses below it, a sell signal is generated. Divergences between the MACD and the currency rate can also be traded .

MACD measures the difference between two moving averages. A positive MACD indicates that the 12-day EMA is trading above the 26-day EMA. A negative MACD indicates that the 12-day EMA is trading below the 26-day EMA. If MACD is positive and rising, then the gap between the 12-day EMA and the 26-day EMA is widening. This indicates that the rate-of-change of the faster moving average is higher than the rate-of-change for the slower moving average. Positive momentum is increasing and this would be considered bullish. If MACD is negative and declining further, then the negative gap between the faster moving average (green) and the slower moving average (blue) is expanding. Downward momentum is accelerating and this would be considered bearish. MACD centerline crossovers occur when the faster moving average crosses the slower moving average.

Parabolic SAR - SAR stands for "stop and reverse." The Parabolic SAR is a time/price stop-loss system that can be used in conjunction with other technical oscillators and studies. The name of this system is derived from the parabolic shape of the dots that appear above and below the currency price. This indicator is commonly used to exit (sell) a long position when the price of a currency falls below the SAR dots and to exit (buy) a short position when the price rises above the SAR. Thus, the Parabolic SAR indicator can be thought of as a "trailing stop." When the price of a currency is above the SAR dotted line and the currency keeps going up, the dots keep rising just below the lows of the current uptrend. When the price falls through the trailing SAR dots, a sell signal is generated. Conversely, when a currency trader initiates a short position and the price of the currency keeps falling, the SAR dots will fall as well trailing the highs of the bars on the current downtrend. When the price of the currency rises above the SAR ceiling, a buy signal is generated to close the position. The SAR works best in trending markets.

ADX(Average Directional Index)-

ADX is an oscillator that fluctuates between 0 and 100. Even though the scale is from 0 to 100, readings above 60 are relatively rare. Low readings, below 20, indicate a weak trend and high readings, above 40, indicates a strong trend. The indicator does not grade the trend as bullish or bearish, but merely assesses the strength of the current trend. A reading above 40 can indicate a strong downtrend as well as a strong uptrend.

ADX can also be used to identify potential changes in a market from trending to non-trending. When ADX begins to strengthen from below 20 and/or

moves above 20, it is a sign that the trading range is ending and a trend could be developing.

When ADX begins to weaken from above 40 and/or moves below 40, it is a sign that the current trend is losing strength and a trading range could develop.

Accumulation/Distribution:

Accumulation/Distribution Technical Indicator is determined by the changes in price and volume. The volume acts as a weighting coefficient at the change of price — the higher the coefficient (the volume) is, the greater the contribution of the price change (for this period of time) will be in the value of the indicator.

In fact, this indicator is a variant of the more commonly used indicator On Balance Volume. They are both used to confirm price changes by means of measuring the respective volume of sales.

When the Accumulation/Distribution indicator grows, it means accumulation (buying) of a particular security, as the overwhelming share of the sales volume is related to an upward trend of prices. When the indicator drops, it means distribution (selling) of the security, as most of sales take place during the downward price movement.

Divergences between the Accumulation/Distribution indicator and the price of the security indicate the upcoming change of prices. As a rule, in case of such divergences, the price tendency moves in the direction in which the indicator moves. Thus, if the indicator is growing, and the price of the security is dropping, a turnaround of price should be expected.

Bulls and Bears Power Indexes are calculated by the formulas :

Bulls Power Index = High – EMA(Price)

Bears Power Index = Low – EMA(Price)

Bullish divergence occurs when price makes a new low which is not confirmed by Bears Power, bearish divergence occurs when price makes a new high while Bulls Power fails to make a new high. Bullish divergence produce buy signal, bearish divergence produce sell signal.

Commodity channel index-

the Commodity Channel Index (CCI) was designed to identify cyclical turns in commodities. The assumption behind the indicator is that commodities (or stocks or bonds) move in cycles, with highs and lows coming at periodic intervals. Lambert recommended using 1/3 of a complete cycle (low to low or high to high) as a time frame for the CCI. (Note: Determination of the cycle's length is independent of the CCI.) If the cycle runs 60 days (a low about every 60 days), then a 20-day CCI would be recommended. For the purpose of this example, a 20-day CCI is used.

Calculation : There are 4 steps involved in the calculation of the CCI;

Calculate the last period's Typical Price (TP) = (H+L+C)/3 where H = high, L = low, and C = close.

Calculate the 20-period Simple Moving Average of the Typical Price (SMATP).

Calculate the Mean Deviation. First, calculate the absolute value of the difference between the last period's SMATP and the typical price for each of the past 20 periods. Add all of these absolute values together and divide by 20 to find the Mean Deviation.

The final step is to apply the Typical Price (TP), the Simple Moving Average of the Typical Price (SMATP), the Mean Deviation and a Constant (.015) to the following formula:

$$CCI = \frac{(TYPICAL\ PRICE - SMATP)}{(0.15 * MEAN\ DEVIATION)}$$

For scaling purposes, Lambert set the constant at .015 to ensure that approximately 70 to 80 percent of CCI values would fall between -100 and +100. The CCI fluctuates above and below zero. The percentage of CCI values that fall between +100 and -100 will depend on the number of periods used. A shorter CCI will be more volatile with a smaller percentage of values between +100 and -100. Conversely, the more periods used to calculate the CCI, the higher the percentage of values between +100 and -100.

Lambert's trading guidelines for the CCI focused on movements above +100 and below -100 to generate buy and sell signals. Because about 70 to 80 percent of the CCI values.

between +100 and -100, a buy or sell signal will be in force only 20 to 30 percent of the time. When the CCI moves above +100, a security is considered to be entering into a strong uptrend and a buy signal is given. The position should be closed when the CCI moves back below +100. When the CCI moves below -100, the security is considered to be in a strong downtrend and a sell signal is given. The position should be closed when the CCI moves back above -100.

Since Lambert's original guidelines, traders have also found the CCI valuable for identifying reversals. The CCI is a versatile indicator capable of producing a wide array of buy and sell signals.

CCI can be used to identify overbought and oversold levels. A security would be deemed oversold when the CCI dips below -100 and overbought when it exceeds +100. From oversold levels, a buy signal might be given when the CCI moves back above -100. From overbought levels, a sell signal might be given when the CCI moved back below +100.

As with most oscillators, divergences can also be applied to increase the robustness of signals. A positive divergence below -100 would increase the robustness of a signal based on a move back above -100. A negative divergence above +100 would increase the robustness of a signal based on a move back below +100.

Trend line breaks can be used to generate signals. Trend lines can be drawn connecting the peaks and troughs. From oversold levels, an advance above -100 and trend line breakout could be considered bullish. From overbought levels, a decline below +100 and a trend line break could be considered bearish.

Traders and investors use the CCI to help identify price reversals, price extremes and trend strength. As with most indicators, the CCI should be used in conjunction with other aspects of technical analysis. CCI fits into the momentum category of oscillators. In addition to momentum, volume indicators and the price chart may also influence a technical assessment.

## About the Author

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